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The particular characters of the gum amidine, and other products of the fermentation of starch, are described at length in notes annexed to this paper; in one of which the author remarks, that the fixation of the elements of water, in the treatment of animal and vegetable substances by the common principles of the laboratory, occurs more frequently than is generally believed; and shows, by a comparative analysis of hog's lard in its recent state and after saponification, that the new properties which oils and fats acquire by saponification, is chiefly referable to the fixation of the elements of water.

On Corpora Lutea. By Sir Everard Home, *Bart. V.P.R.S.* Read January 14, 1819. [*Phil. Trans.* 1819, *p.* 59.]

In this paper the author describes the origin, growth, use, and decay of the Corpora lutea. The ovarium, before puberty, is a loose, open texture, in which are a number of globular cells. After puberty, the Corpus luteum forms in the substance of the ovarium. In the cow it appears, when magnified, as a mass of convolutions, somewhat like the brain. Sir Everard then proceeds to describe the drawings which accompany this paper, and of which the object is to show that the Corpora lutea are the structures in which the ova are formed; that they exist previous to, and perfectly independent of, sexual intercourse; and that, when they have fulfilled their office of forming ova, they are destroyed by absorption, whether the ova are impregnated or not.

On examining the appearance of the Corpora lutea before and after impregnation, it appears probable that impregnation is necessary for the expulsion of the ovum; but when impregnation does not take place, the ovum appears to remain in the cavity of the Corpus luteum. Hence it may be concluded, that impregnation takes place in the ovarium itself.

Remarks on the Probabilities of Error in Physical Observations, and on the Density of the Earth, considered, especially with regard to the Reduction of Experiments on the Pendulum. In a Letter to Capt. Henry Kater, *F.R.S. By* Thomas Young, *M.D. For. Sec. R.S.* Read January 21, 1819. [*Phil. Trans.* 1819, *p.* 70.]

In the first section of this letter, Dr. Young proceeds to examine in what manner the apparent constancy of many general results, subject to numerous causes of diversity, may be best explained; and shows that the combination of many independent causes of error, each liable to incessant fluctuation, has a natural tendency, dependent on their multiplicity and independence, to diminish the aggregate variation of their joint effect; a position illustrated by the simple case of supposing an equal large number of black and white balls to be thrown into a box, and 100 of them to be drawn out at once or in succession; when it is demonstrated that there is 1 chance in $12\frac{1}{2}$;